

Appl. No.: 10/727,728
 Response dated August 24, 2005
 Reply to Office action of March 24, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended). A method of coating a glass substrate, said method comprising contacting the glass substrate with a coating composition comprising:

- _____ (a) providing a glass substrate; and
_____ (b) contacting the glass substrate with a coating composition
comprising a water-dispersible epoxy resin which is solid at 20°C, with the proviso that
the epoxy resin does not comprise a reaction product of epichlorohydrin and a
component selected from the group consisting of bisphenol A and bisphenol F.

(A) 1 to 98 wt% of a water-dispersible epoxy resins, solid at 20°C, with the proviso
that the epoxy resin does not comprise the reaction product of epichlorohydrin
and a component selected from the group consisting of bisphenol-A and/or
bisphenol-F;

(B) 1 to 98 wt% of a water-dilutable epoxy resin curing agent; and

(W) 1 to 98 wt% water, wherein component (B) comprises at least one curing agent
selected from the group consisting of

B1), obtained by reaction of

(a) one or more α,β -unsaturated carboxylic acid esters of the formula:



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wherein R¹ is an aromatic or aliphatic group with up to 15 carbon atoms, R², R³ and R⁴ independently of one another are hydrogen, branched or unbranched, aliphatic or aromatic groups with up to 20 carbon atoms each or a $-(CH_2)_n-COOR^1$ group, wherein R¹ has the aforementioned significance and n is a number in the range of 1 to 10, is reacted in the presence of an ester exchange catalyst with

- (b) one or more hydroxyl compounds wherein the compounds (a) and (b) are used in quantities such that the equivalent ratio of the hydroxyl groups in (b) to the ester groups COOR¹ in the α,β -unsaturated carboxylic acid esters (a) is in the range of 1.5:1 to 10:1;

the intermediate product Z1 thus obtained is reacted with

- (c) one or more mono-, di- or polyaminopolyalkylene oxide compounds, wherein an equivalent ratio of the reactive H-atoms on the amino nitrogen atoms of (c) to the ester groups in the intermediate compound Z1 falls in the range of 10:1 to 1:10;

then the intermediate product Z2 thus obtained is reacted with

- (d) one or more polyeptides, wherein the equivalent ratio of oxirane rings in polyeptide (d) to reactive hydrogen atoms of the mono-, di- or polyaminopolyalkylene oxide compounds used according to (c) is in a range of 100:1 and 1.5:1, and the intermediate product Z3 thus obtained is then reacted with

- (e) one or more primary and/or secondary amines, wherein the equivalent ratio of oxirane rings in the intermediate product Z3 to the reactive H atoms on the amino nitrogen atoms of (e) is adjusted to a value in the range of 1:1.5 to 1:20,

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B2), which is obtained by reaction of

(a) one or more α,β -unsaturated carboxylic acid esters of the formula:



wherein R¹ is an aromatic or aliphatic group with up to 15 carbon atoms, R², R³ and R⁴ independently of one another are hydrogen, branched or unbranched, aliphatic or aromatic groups with up to 20 carbon atoms each or a $-(\text{CH}_2)_n-\text{COOR}^1$ group, wherein R¹ has the aforementioned significance and n is a number in the range of 1 to 10, with

(c) one or more mono-, di- or polyaminopolyalkylene oxide compounds wherein the compounds (a) and (c) are used in quantities such that the equivalent ratio of the reactive H-atoms on the amino nitrogen atoms of (c) to the C=C double bond in the carboxylic acid esters (a) in α,β -position relative to the COOR¹ group shown in formula (I) falls in the range of 10:1 to 1:10,

then the intermediate product Z4 thus obtained is reacted with

(d) one or more polyepoxides, wherein the equivalent ratio of oxirane rings in polyepoxide (d) to reactive hydrogen atoms of the mono-, di- or polyaminopolyalkylene oxide compounds used according to (c) is in a range of 100:1 to 1.5:1,

and the intermediate product Z5 thus obtained is then reacted with

(e) one or more primary and/or secondary amines, wherein the equivalent ratio of oxirane rings in the intermediate product Z5 to the reactive H atoms on the amino nitrogen atoms of (e) is in a range of 1:1.5 to 1:20;

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and

B3), which is obtained by reaction

(a) one or more α,β -unsaturated carboxylic acid esters of the formula:



wherein R¹ is an aromatic or aliphatic group with up to 15 carbon atoms, R², R³ and R⁴ independently of one another are hydrogen, branched or unbranched, aliphatic or aromatic groups with up to 20 carbon atoms each or a $-(\text{CH}_2)_n-\text{COOR}^1$ group, wherein R¹ has the aforementioned significance and n is a number in a range of 1 to 10,

(c) one or more mono-, di- or polyaminopolyalkylene oxide compounds, wherein the compounds (a) and (c) are used in quantities such that the equivalent ratio of the reactive H-atoms on the amino nitrogen atoms of (c) to the C=C double bond in the carboxylic acid esters (a) in α,β -position relative to the COOR¹ group, shown in formula (I), is in a range of 10:1 to 1:10;

the intermediate product Z4 initially obtained is then reacted with

(g) one or more polyhydroxy compounds, wherein the equivalent ratio of Z4 to hydroxy groups in polyhydroxy compound (g) is adjusted to a value in the range of 1:1.1 to 1:10,

and the intermediate product Z6 thus obtained is then reacted with

(d) one or more polyepoxides, wherein the equivalent ratio of oxirane rings in polyepoxide (d) to hydroxyl groups in intermediate product Z6 is in a range of 1.5:1 to 6:1

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and the intermediate product Z7 thus obtained is then reacted with
(e) one or more primary and/or secondary amines, wherein the equivalent
ratio of oxirane rings in the intermediate product Z7 to the reactive H
atoms on the amino nitrogen atoms of (e) is in a range of 1:1.5 to 1:20.

Claim 2 (cancelled).

Claim 3 (original): The method according to claim 1, wherein the glass substrate comprises a glass fiber.

Claim 4 (currently amended): A coated glass fiber prepared by the ~~process comprising~~
method of claim 1. [[:]]

~~(a) providing a glass fiber to be coated;~~
~~(b) providing a coating composition comprising a water dispersible epoxy resin which is solid at 20°C, in an amount of from 1 to 98% by weight, with the proviso that the epoxy resin does not comprise a reaction product of epichlorohydrin and a component selected from the group consisting of bisphenol A and bisphenol F; a water dilutable epoxy resin hardener in an amount of from 1 to 98% by weight; and water in an amount of from 1 to 98% by weight; and~~
~~(c) contacting at least a portion of the glass fiber with the coating composition.~~

Claim 5 (original): A method of reinforcing synthetic fiber, said method comprising:
(a) providing a synthetic fiber;
(b) providing a coated glass fiber according to claim 4; and

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(c) combining the synthetic fiber and the coated glass fiber.

Claim 6 (currently amended): A composite material comprising a coated glass fiber according to claim 4 ~~and one or more other materials or fillers.~~